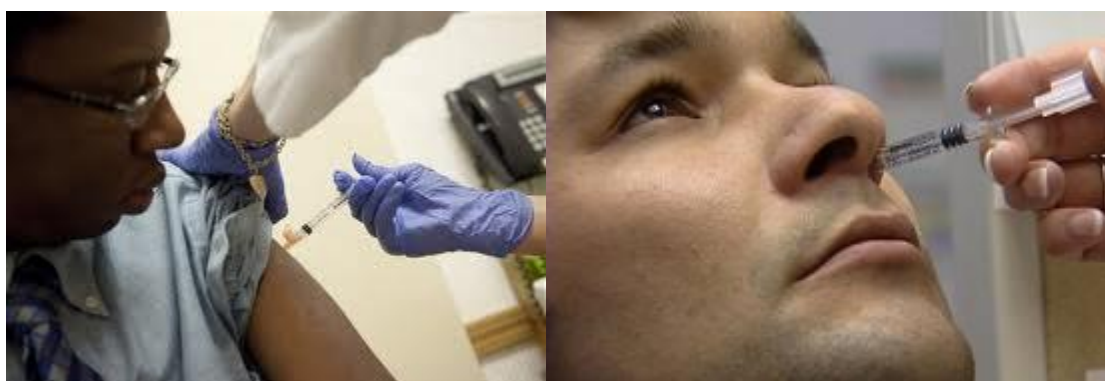


Always, Sometimes, Never: How Regularly Are Adults Vaccinated?

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Background

Numerous studies have explored the determinants of influenza vaccination in order to identify potential mechanisms to improve influenza vaccination rates. Hypothesized determinants include socio-economic factors, healthcare utilization factors, and beliefs and attitudes regarding vaccination. One of the most consistent predictors of influenza vaccination identified in the literature is previous receipt of influenza vaccination (i.e., history of influenza vaccination). This suggests that a promising strategy in improving vaccination rates is to get individuals to initiate the behavior for the first time. However, in previous studies, individuals are typically asked about their vaccination status in the preceding one or two seasons only; thus, we get a very narrow picture of vaccination history and ongoing behaviors regarding annual influenza vaccination. As a result, we cannot identify how adults who are never vaccinated differ from those who are occasionally vaccinated or consistently vaccinated each year. Furthermore, we are unable to identify any literature describing what percentage of the population never receives an

influenza vaccination, a statistic important to understanding the types of interventions that should be used on the general population to increase vaccination rates.

To address this gap in the literature, we aimed to use a large, nationally representative sample of U.S. adults age 18+ to categorize the general population by their complete vaccination history and measure the regularity of ongoing annual influenza vaccination among adults who were and were not vaccinated during the 2009-2010 vaccination season.

Methods

We fielded an online survey to a nationally representative panel of U.S. adults operated by Knowledge Networks in 2010. We oversampled adults aged 65 and older, African Americans, and Hispanics to ensure a sufficient representation of older adults and ethnic diversity. The survey response rate of 73.5% yielded an overall sample of 4040 respondents. Respondents were asked whether and where they were vaccinated for seasonal influenza during the 2009-2010 season and whether they always, usually, or sometimes received the seasonal influenza vaccine in prior seasons. Results were weighted to be nationally representative. We generated descriptive statistics on ongoing vaccination behaviors.

Results

Thirty-nine percent of adults reported that they never receive influenza vaccinations. As compared to adults with a history of vaccination, they were younger, less likely to have a chronic disease, and are more likely to be uninsured (Table 1). Twenty-six percent of adults reported “sometimes”, 10% reported “usually”, and 25% reported “always” being vaccinated for influenza. As expected, vaccination status in the 2009-2010 season depended on the regularity of past vaccination ($p < .01$). Individuals who reported that they always receive influenza vaccinations were more likely to be vaccinated during the 2009-2010 season. Ninety-three percent of individuals who always received influenza vaccinations were vaccinated in 2009-2010 compared to 47% of individuals who usually and 44% of individuals who sometimes received influenza vaccinations. Among those who were not vaccinated in 2009-2010, 3% reported always being vaccinated, 9% reported usually being vaccinated, and 24% reported sometimes being vaccinated, and 64% reported never being vaccinated. Although those vaccinated in a medical setting (e.g., doctor’s office or medical clinic) in 2009-2010 were not more likely to

report always receiving influenza vaccinations than those vaccinated in other settings, those vaccinated in a retail setting in 2009-2010 were significantly more likely to report always receiving an influenza vaccination than those vaccinated in other settings (69% vs. 56%, $p=.01$).

Conclusions

We found considerable variation in the self-reported regularity of annual seasonal vaccination among subgroups of adults that was not well captured by simple questions about vaccination during the most recent flu season. These results suggest that information about vaccination histories could assist in the design and targeting of interventions to promote vaccinations. Furthermore, our results suggest that retail settings serve a higher proportion of persons who habitually receive influenza vaccinations. Encouraging the roughly 39% of the population that never receives influenza vaccinations to initiate the behavior may require more aggressive strategies by primary care providers in traditional medical settings; however this will be challenging because this younger, healthier population is less likely to have frequent interactions with providers. By investigating how individuals who *never* receive an influenza vaccination differ from those who occasionally or frequently seek out vaccination, we can obtain useful information on how to target our efforts to increase vaccination rates in specific populations.

Table 1: Comparison of Adults who “Never” Receive Influenza Vaccinations and Adults with a History of Influenza Vaccination

Characteristic (%)	<i>Never Vaccinated for Influenza</i>	<i>History of Influenza Vaccination</i>	p-value
Age (Mean)	41	50	<.01
Female Gender	49	54	.1
Black Race	13	10	.06
Household Income <40,0000	59	61	.58
Chronic disease (yes)	16	36	<.01
Health Insurance (yes)	72	87	<.01
Urban area (yes)	83	84	.70